BP Cherry Point Cogen
DEIS Comment - 20

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BP Cherry Point Refinery
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Irina Makarow
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Olympia, WA 98504-3172

Re: DEIS Comments

October 31, 2003

Dear Ms. Makarow

Thank you for the opportunity to comment on the BP Cherry Point Cogeneration Project Draft Environmental Impact Statement (DEIS) DOE/EIS-0349. We believe that the DEIS provides a fairly good description of the proposed project and its potential environmental impacts (or lack thereof). We agree wholeheartedly that the proposed project will not have any significant adverse environmental impacts. We have two general comments regarding the document. 1

Our first general comment concerns the "No Action Alternative." Chapter 2 describes the No Action Alternative, and then the various sections of Chapter 3 compare the potential environmental impact of the proposed Cogeneration Project to those of the No Action Alternative. In order for the comparison of environmental impacts to be complete and accurate, however, the No Action Alternative must be properly described. Under the No Action Alternative, although the Cherry Point Cogeneration Project would not be constructed, other electrical generating facilities would need to be constructed and operated to meet growing regional electricity demand over time. Such facilities would be expected to have the same sorts of potential environmental impacts as the proposed Cogeneration Project (e.g. air emissions, CO2 emissions, water use, construction related impacts). However, the facilities providing power under the no action alternative facilities are not likely to be cogeneration facilities or to have the other advantages that the Cogeneration Project has by virtue of its integration with the refinery's existing infrastructure. Among other things, these other facilities are likely to emit more air pollutants and CO2 emissions, use more water use, burn more fuel and have more impacts associated with constructing related infrastructure and facilities. Throughout the document, the DEIS should make clear that the same amount of electricity would be generated by different facilities under the No Action Alternative, and as a result, the No Action Alternative would have more impact on the environment than the proposed Cogeneration Project. 2

Our second general comment concerns the "additional recommended mitigation" found in the DEIS. Under the State Environmental Policy Act (SEPA), recommendations for additional mitigation should be tied directly to significant impacts identified in the DEIS, and should be based upon regulations or policies formally adopted by the action agency pursuant to SEPA. The DEIS does not justify the recommendations of additional mitigation as required by law.

In addition to these general comments, we are enclosing a list of specific comments. Many of these comments are minor, pointing out typographical errors or correcting statements describing the proposed project, but others address more substantive concerns. In each case, we have tried to identify the specific section, page and paragraph to which our comment relates. 3

Please do not hesitate to contact me if you have questions regarding any of these comments, or if you need additional information to complete the Final EIS.

Sincerely,

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.cc
Karen McGaffey
Mark Moore
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1	MDT	1-4	1.2.1	4	5		The boiler efficiency provided in the application was 85%. However, 83% efficiency is the actual boiler efficiency and 83% efficiency was used for the boiler emission calculations.	3(1)
2	KM	1-7	1.4.1	1	1		The total project area should be 194-acres. If the DEIS is going to use 265-acres, then it should also state that the BPA transmission line ROW from the interconnection to the Custer substation is included in the total acreage.	3(2)
3	WJR	1-7	1.4.1	6		new	Add "Emergency Firewater Pump" to the bullet list.	3(3)
4	MDT	1-7	1.4.1	5		new	Add "Water Treatment Facilities" to the bullet list	3(4)
5	TS	1-7	1.4.1	5		5	Change "150 MVA step-down transformer" to "185 MVA nominal step-up transformer"	3(5)
6	TS	1-7	1.4.1	5		new	Add "One 275 MVA step-up transformer" to the bullet list.	3(6)
7	MDT	1-11	1.4.2	1	2	new	Cogeneration makes this project a more efficient producer of electricity than a standalone gas-fired combined cycle combustion turbine plant. Because the opportunities for cogeneration are limited, if this plant were not built, then another less efficient plant would be built within the region to supply the growing demand for electricity. A standalone plant would use more water, produce more air emissions, produce more green house gasses, and use more fuel per kWh of electricity produced.	3(7)
8	KM	1-13	1.6.3	1	4		Delete the last sentence and replace it with the following, "The Ferndale Pipeline would supply gas for the new Cogeneration Plant and the Refinery. If additional gas is needed during periods of peak Refinery demand, then Cascade Natural Gas would provide/transport supplemental gas to the project."	3(8)
9	KM	1-14	1.6.8	2		1	230 KV Switchyard - The cogeneration facility would own about 65% of the switchyard and BPA wold own about 35%. BPA's portion is just that part of the switchyard that allows the output of the plant to be routed to BPA's grid.	3(9)
10	KM	1-14	1.6.8	2		2	Industrial Water Supply - We expect Whatcom PUD to build, own and operate the water supply line up to the Cogeneration Project boundary. The new pipeline connection would start at the southeast corner of the Refinery and run parrallel to the existing Refinery supply line along Blaine Road.	3(10)
11	KM	1-14	1.6.8	2		3	Natural Gas Suppply and Compressor Station - The Cogeneration Plant would own and operate the natural gas compressor station located inside the Refinery.	3(11)
12	KM	1-14	1.6.8	2		4	Intermediate Voltage Substation - The Refinery would build the 230 KV to 12.5 KV substation adjacent to the existing MS3 substation on an existing graveled pad.	3(12)
13	KM	1-15	1.6.8	3		1	Refinery Interface Piping Systems - The Refinery would build an elevated pipeway to carry process streams such as steam and condensate between the two facilities. The pipeway would cross the utility corridor between Blaine Road and the Cogeneration boundary on a series of pipe supports called "sleepers". The length of the pipeway in this corridor is about 630 ft. The supports are placed on 37 concrete foundations constructed, which consist of two 2-foot by 2-foot concrete pedestals.	3(13)
14	KM	1-15	1.6.8	3		2	Custer/Intalco Transmission System - Modifications to this transmission system will be built, owned, and operated by BPA. BPA should supply this informaton.	3(14)

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15	TS	1-18	1.6.8	Table 1-2	Contruction	2	Delete second bullet. The site was surveyed for contamination during the geotech survey and no contamination was found. Sampling is not planned during clearing, grading, and trenching. However, if contamination is found during these activities, then clearing, grading and trenching would be halted until the contamination could be safely dealt with.	3(15)
16	KM	1-19		Table 1-2	Operation		Additional Mitigation Measures - We do not agree with the additional mitigation measure proposed. The facility would evaluate the potential impacts of tephra fall out and take appropriate action with regard to plant operations.	3(16)
17	WJR	1-19		Table 1-2	Operation	1	Add "or WAAQS" after NAAQS at the end of the sentence.	3(17)
18	KM	1-20		Table 1-2	Operation	1	Delete and then add, "Use appropriate measures to reduce particulate matter while transporting material in trucks, which may include covering and wetting."	3(18)
19	KM	1-20		Table 1-2	Operation	2	Delete and then add, "Use appropriate meaures to reduce and remove particulate matter from wheels before entering roads, which may include wheel washers."	3(19)
20	KM	1-20		Table 1-2	Operation	4	Delete and then add, "Maintain construction equipment in good working order to reduce CO and NOx emissions."	3(20)
21	WJR	1-20	1	Table 1-2	Operation	1	Add "or Washington Ambient Air Quality Standards" after "National Ambient Air Quality Standards" at the end of the sentence.	3(21)
22	WJR	1-21		Table 1-2	Operation		No Action Alternative - The Refinery would continue to operate utility boilers, new less efficient power plants would be built elsewhere in the region with higher air emissions and higher greenhouse gas emissions, higher water useage, and use more fuel per kWh.	3(22)
23	KM	1-27		Table 1-2	Operation	10	Additional Recommended Mitigation Measure - We do not understand what is being recommended by this item. The plant surface will be mostly concrete and gravel. There will be areas of landscaping, which will be maintained to keep noxious weeds from spreading.	3(23)
24	KM	1-36		Table 1-2	Operation	1	Delete "An eastbound and" The application specifies only a westbound turn lane.	3(24)
25	KM	1-36		Table 1-2	Operation	3	Delete "...Blaine Road/Grandview Road (SR548).." No signal is planned at the Blaine Road/Grandview Road Intersection. Move this entire bullet item to the Mitigation Measures Proposed by the Applicant.	3(25)
26	MDT	2-6	2.2.2	1	1		195 acres, not 265 acres (33+15+36+110) unless it is stated that the Transmission line corridor is from the interconnect to the Custer Substation iss included in the acreage.	3(26)
27	MDT	2-6	2.2.2	3		new	Add "Emergency Fire Water Pump" to the bullet list	3(27)
28	MDT	2-6	2.2.2	3		new	Add "Water Treatment Facilities" to the bullet list	3(28)
29	TS	2-6	2.2.2	5			Change "150 MVA step-down transformer" to "185 MVA nominal step-up transformer"	3(29)
30	TS	2-6	2.2.2	5		new	Add "One 275 MVA step-up transformer"	3(30)
31	TS	2-8	Table 2-1	5	1		Change 'universal' to "uninteruptable"	3(31)
32	MDT	2-10	Table 2-1	MS1			New Low Voltage Switchyard near MS 3 only	3(32)

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33	TS	2-10	Table 2-1	2			The decription of the high voltage swtichyard in the DEIS accurately represents the switchyard we described in the application, however, the follow describes our current thinking. We'll leave it up to EFSEC/Shapiro to determine if description in the DEIS needs to be changed. "The 230 kV switchyard will be a breaker and a half arrangement. The BPA interconnect will be two 230 kV receiving structures and four (4) 230 kV circuit breakers and eight (8) disconnects switches and associated metering, protection, control and communication. The Project interconnection to the switchyard will include four (4) 230 kV receiving structures for GSU interconnections and two (2) 230 kV receiving structures for Refinery interconnection. The remaining eight (8) circuit breakers, 24 disconnect switches and associated protection, control and communication. This results in a split of approximately a 35% BPA and 65% Project.	3(33)
34	TS	2-13	Table 2-2				The following tank sizes in the DEIS are correct, but the following represents our current thinking. We'll leave it up to EFSEC/Shapiro to determine if the tank sizes need to be modified in the application. "Condensate storage tank 600,000 not 500,000; Demineralized Water storage tank is 200,000, not 100,000; Wastewater equalization tank is 500,000, not 400,000 and Filtered water & firewater storage tank is 500,000 not 425,000."	3(34)
35	MDT	2-18	2.2.2	1	8		The rewrite the sentence to read, "The detention pond would be constructed as an unlined pond." Because the stormwater routed to this pond is uncontaminated rain water, ground water would not be affected.	3(35)
36	TS	2-18	2.2.2	2	2		Rewrite the second sentence as follows, "Storm water contained in secondary containment areas would be evaluated prior to discharge. If the water is uncontaminated, then it would be routed to the Stormwater system. If the water is contaminated, then it would be routed to the Refinery Wastewatwer system."	3(36)
37	KM	2-19	2.2.2	5	4		This sentence states that the "maximum" water use will be approximately 2,780 gpm. That's not correct. The maximum amount of once through cooling water available from Alcoa is 2,780 gpm. The average use by the Cogen project will be 2,244 to 2,316 gpm, but the maximum instantaneous use could be higher than 2,780 gpm.	3(37)
38	MDT	2-26	2.2.2	4	2		Change "CMA1" to "CMA2". The project site detention pond will discharge to CMA2.	3(38)
39	MDT	2-27	2.2.2	3	4		Delete, "...,and would meet WSDOT and emergency vehicle requirements." Access road #3 was not intended to meet WSDOT and/or emergency vehicle access requirements.	3(39)
40	MDT	2-28	2.2.3	4	2		Rewrite the sentence, "The Application for Site Certification indicates that pile-supported concrete foundations would be used for all major equipment items and major buildings." Delete the reference to the steam turbine now being the only structure to be supported on piles.	3(40)
41	MDT	2-29	2.2.3	2	6		Change "6 to 10 feet deep" to "5 feet deep"	3(41)
42	MDT	2-29	2.2.3	2	7		Change "3 to 4 over the pipe" to "sufficient to bring the trench level up to original grade"	3(42)

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43	MDT	2-30	2.2.3	2	1		Change "150-foot" to "125-foot". While 150 ft was used in the application, the ROW will be as wide as BPA requires. We believe this will be 125 ft.	3(43)
44	TS	2-35	2.2.4	3	1		Rewrite the sentence to read, "While the cogeneration facility is generally designed to allow maintenance to occur without a complete plant shutdown, maintenance on mechanical parts of the steam turbine generator will most likely require a complete plant shutdown."	3(44)
45	MDT	2--40	2.4.1	5	1		Add, " Site 2 also interferes with future refinery modifications. Future refinery process units, such as isomerization and clean diesel units, require a much greater level of interconnection than the cogeneration facility. Because of the the interconnections, these process units require must be located very near existing process areas."	3(45)
46	TS	3.1-19	3.1.5	1	1		Delete first sentence and add, "The site was surveyed for contamination during the geotech survey and no contamination was found."	3(46)
47	MDT	3.2-3	3.2.1	Table 3.2-1		SO2	Delete the National three-hour primary standard for SO2 0.14. There is no national three-hour primary standard for SO2	3(47)
48	WJR	3.2-3	3.2.1	Table 3.2-1	Ozone		The eight-hour ozone standard is "157 ug/m^3" not "176 ug/m3"	3(48)
49	MDT	3.2-17	3.2.3	5	1		Delete "including background". The concentrations shown in table 3.2-9 are strictly modeled concentrations without background.	3(49)
50	WJR	3.2-18	3.2.3	2	1		Rewrite the sentence to read, "The Industrial Source Complex Prime (ISC Prime) dispersion model was used."	3(50)
51	BRP	3.2-19	3.2.3	Table 3.2-11			Change the SO2 standard for annual and 24-hour from "80" and "365" to "53" and "260" The new numbers are the WAAQS, which are more restrictive then the NAAQS.	3(51)
52	WJR	3.2-19	3.2.3	Table 3.2-11			Please change the 1-hour SO_2 standard from "1,065" to "1,050"	3(52)
53	MDT	3.2-19	3.2.3	1	6		Modify the sentence to read, "Also, the modeling results show that the annual maximum concentration of NO2 is 0.0053 ug/m3, which is well below the SIL of 0.1ug/m3."	3(53)
54	BRP	3.2-19	3.2.3	1			Add a sentence at the end of the paragraph, "Both the modeled concentrations of PM and SO2, annual and 24-hour are well below the respective SIL's in class I areas."	3(54)
55	MDT	3.2-28	3.2.3	Table 3.2-20	PM10	Net	Change "-84" to "84" The sign was entered incorrectly. We are providing a new table, which includes the effects of the changes in Molecular weight on the over all balance. This change makes the balance more complicated, but it is also more accurately describes the actual particulate balance.	3(55)
56	BRP	3.2-31	3.2.3	Table 3.2-23			New table provided with Molecular weight conversion	3(56)
57	BRP	3.2-33	3.2.3	5	2		Delete the last sentence and add, "Cooling tower modeling shows that icing will not occur."	3(57)
58	KM	3.2-34 to 3.2-35	3.2.5				The "Regulatory Framework" discussion and summary of mitigation requirements is incomplete and potentially misleading. In addition to listing the four Washington projects for which EFSEC has required greenhouse gas mitigation, the EIS should clearly state that no other operating or permitted facilities in Washington are subject to any greenhouse gas mitigation requirement.	3(58)

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59	KM	3.2-35	3.2.5	last 2			The "Project Greenhouse Gas Emissions" discussion is incomplete. An EIS should discuss the impact of the proposed project in comparison to the "no action alternative." Under the no action alternative, growing regional electric demand would be met by generating facilities other than the Cogeneration Project. Those facilities would be less efficient and more GHG-intensive than the Cogeneration Project. Therefore, operation of the Cogeneration Project would result in fewer GHG emissions than would occur under the no action alternative. It is for this reason that virtually every authority on global warming and GHG emissions recommends the increased reliance on gas-fired combined cycle combustion turbine facilities, and cogeneration facilities in particular, as an important near-term solution to rising GHG emissions.	3(59)
60	KM	3.2-35	3.2.5	last 2			In his Direct Testimony, which BP filed with EFSEC on September 19, 2003, W. David Montgomery (an internationally recognized expert on the economics of GHG reduction) estimates that the operation of the Cogeneration Project will result in 320,000 tons less CO2 being emitted compared to the No Action Alternative.	3(60)
61	KM	3.2-35	3.2.5	last ¶	2		The statement "Fugitive leaks of natural gas from the systems serving the proposed cogeneration facility are estimated to emit methane equivalent to 12% of the project's stack emissions of greenhouse gas" is not appropriate. Leaks of methane that occur at various places in the North American natural gas pipeline system are not directly related to the Cogeneration Project and are certainly not caused by the Cogeneration Project. If the Cogeneration Project were not built, natural gas would be transported to other electrical generating facilities, and system-wide transportation losses would occur in any event. If leaks are occurring in the pipeline system, it is the responsibility of entites that own and operate that system to address those leaks and mitigate them as appropriate.	3(61)
62	BRP	3.2-38	3.2.6	5	last		Please add the following sentence, "These receptors are not near the BP Cherry Point Cogeneration Project site and not effected by the Project emissions."	3(62)
63	BRP	3.2-39	3.2.6	1	2		"100 out of 18" should probably be "10 out of 18".	3(63)
64	WJR	3.2-39	3.2.6	1	2		Add a sentence at the end of the paragraph which reads, "These receptors are not near the Cherry Point Project site and are not impacted by the Cherry Point Project emissions."	3(64)
65	KM	3.2-42	3.2.6	5	6		The statement "the production of greenhouse gases could be reduced if operation of the BP cogeneration facility displaces the operation of other non-cogeneration facilities" is incomplete and may confuse the reader. It should go on to state that, in the region's competitive wholesale power market, power plants operate according to their merit order of cost and efficiency. Therefore, BP's cogeneration facility would displace less efficient and greater-emitting facilities. Please see the Direct Testimony of James Litchfield, W. David Montgomery, and Mark Moore filed with EFSEC by BP on September 19, 2003. In particular, David Montgomery estimated that operation of the BP facility would result in a decrease in CO2 emissions of 320,000 tons per year.	3(65)

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66	BRP	3.2-44	3.2.6	Table 3.2-28			The SO_2 24-hour impact at Abbotsford is 0.058 not 0.58.	3(66)
67	BRP	3.2-44	3.2.6	Table 3.2-29	SO2		Please change the standards for SO_2 annual and 24-hour from "80" and "365 to "53" and "260". The 53 and 260 numbers are WAAQS's and more restrictive than the NAAQS.	3(67)
68	WJR	3.2-44	3.2.6	Table 3.2-29	SO2		Please change "1,065" to "1050" for the 1-hour SO_2 standard.	3(68)
69	KM	3.2-45	3.2-7			7	Delete the bullet under additional recommended mitigation measures. Add, "Appropriate measures will be carried out to minimize PM due to the transport of material in trucks."	3(69)
70	MDT	3.2-46	3.2.7	3			Delete the paragraph and add "The Refinery has committed to removing the three older boilers within six months of beginning commercial operations."	3(70)
71	KM	3.2-46	3.2.8	6	4		The statement "The various analyses . . .indicate that air emissions associated with the proposed cogeneration facility would occur and would have an impact on the overall air quality of the region" is misleading, if not factually incorrect. The statement suggests that the project will have a noticeable impact on air quality throughout the region, but the analyses demonstrate the opposite. Even without taking into account the reductions in emissions at the refinery that will occur as a result of the cogeneration project, the modeling analyses indicate that the facility emissions will have a negligible effect on ambient concentrations of regulated pollutants in the region. Even the maximum modeled impacts at the maximum point of impact are below the "significant impact levels" or SILs established by the Department of Ecology. Modeled impacts diminish rapidly as you move away from the facility. It would be more accurate to say that the analyses indicate that the project will "have no practical effect on the overall air quality of the region."	3(71)
72	MDT	3.3-21	3.3.2	3	8		Delete and rewrite as follows, "To the extent possible, construction of the storm drainage facilities for the laydown areas would occur when the ground is dry enough to work efficiently."	3(72)
73	MDT	3.3-22	3.3.2	4	5		Delete and rewrite as follows, "To the extent possible, construction of the water reuse facilities would occur when the ground is dry enough to work efficiently."	3(73)
74	MDT	3.3-23	3.3.2	2	3		In response to concerns about wetland C. The proposed ditch is on the downslope side of the wetland and could only drain the edge near the ditch unless the ditch intercepted a low spot in the wetland. Our approach is to use the new 1-foot contour map (and site work as necessary) to fine-tune the design of the perimeter ditch. The fundamental idea will be to keep it close to the existing elevation of the wetland to prevent draining just because of elevation difference (the drainage ditch concept). The width will be varied to manage the anticipated volume at any given point along it. If necessary, a berm will be placed on the powerplant side of the ditch to make sure the water can't escape across the site. Where the pad for the site is already elevated above the wetland, it will form a natural berm, and the only thing necessary will be to make sure the edge of the pad is impervious enough to prevent seepage from making the pad unusable. If the ditch crosses a low spot in the wetland, it may be necessary to berm the wetland side of the ditch for its distance across the low spot. With this fine-tuning, all potential	3(74)

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75	KM	3.3-23	3.3.2	5	2		There's a typo. It should read that Alcoa will provide approximately "2,780 gpm", not "2,770 gpm"	3(75)
76	MDT	3.3-28	3.3.5	5			Please add, "The project is considering a septic system as an alternative to routing sanitary sewer to the Birch Bay Water and Sewer District."	3(76)
77	MDT	3.4-14	3.4.2	2	7		Delete the sentence regarding the requirement to perform a ground water evaluation. Stormwater will be collected from uncontaminated areas of the project site and would have no effect on the groundwater.	3(77)
78	MDT	3.5-13	3.5.2	3	1		Replace "5" with "4". Only four transmission line towers are required.	3(78)
79	MDT	3.6-2	3.6.1	Table 3.6-1		Interface	The Refinery Interface Area would not be designated as "Open Space" and should be labeled "no" under the Open Space Column.	3(79)
80	MDT	3.7-23	3.7.2	4	1		Change "five" to "four". Only four new towers are required.	3(80)
81	MDT	3.7-23	3.7.2	4	4		Change "five" to "four". Only four new towers are required.	3(81)
82	MDT	3.7-35	3.7.5	1	4		Add to the last sentence, "...during initial clearing activities." After then site is cleared and graveled, the requirement to clean all equipment before leaving the site should end.	3(82)
83	KM	3.9-2	3.9.1	2	2		The statement than an increase of "3 to 5 dBA will be noticeable to most people" is not accurate without qualification. Although it may be possible for most people to discern a 3 to 5 dBA change in a laboratory setting, most people will not notice a change of less than 5 dBA in the real world. See Pre-filed Direct Testimony of David Hessler filed with EFSEC on September 29, 2003 at page 8 (A 5 dBA "increase is commonly described as barely being perceptible with careful listening").	3(83)
84	KM	3.9-6	3.9.2	4	1		The statement "some of the residential receptors' existing noise levels are shown to exceed the regulatory limit outlined in WAC 170-60," reflects a misunderstanding of the noise regulations. As correctly explained on page 3.9-2 of the DEIS, the Washington noise regulations apply to a single source of noise, rather than limiting the cumulative amount of a noise at a particular location. Therefore, it is not appropriate to say that the existing cumulative noise levels at a particular location exceed the regulatory limit. The question is whether a single specific source of noise causes sound levels to exceed the regulatory limits at the particular location.	3(84)
85	MDT	3.9-9	3.9.3	Table 3.9-5			Daytime/nighttime limits are compared against modeled plus background. This table should only compare modeled noise levels to the regulatory limits. For the same reason as above.	3(85)
86	MDT	3.9-12	3.9.6			2	Delete bullet 2. The project would agree to maintain construction equipment in good working order, but it would not agree to add additional noise attentuation features that were not already part of the original equipment.	3(86)
87	MDT	3.9-12	3.9.6			3	Delete bullet 3. The project would agree to use equipment that is maintained in good working order. The project would not specify that only the quietest available be used.	3(87)
88	KM	3.13-16	3.13.2	2	3		"2,770" should be "2,780"	3(88)

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89	MDT	3.14-9	3.14.3	3	2		The survey covered the entire area of the project upto the EFSEC boundary and the Natural gas pipeline ROW to the north. The area through the pipeline ROW (approximately 50ft) up to Grandview was not included in the survey. As with all areas of the project, if archeological remains are found, contruction activities in this area would stop until the appropriate authorities are notified.	3(89)
90	MDT	3.14-11	3.14.6	6			The completed archeological survey included detention pond 2, the interconnecting pipeway and access road #3. The substation inside the Refinery would be located on an existing gravel pad. The exact locations for the underground lines have not been determined, but the potential to find archeological resources in these areas are low. As with other all areas of the project, if archeological resources were found during excavation activities, then the appropriate authorities would be notified.	3(90)
91	DHE	3.15-9	Table 3.15-4			footnote 2	"Rate - Accidents per million vehicle miles." is erroneous, and should be corrected to "Rate - Accidents per million vehicles entering intersection."	3(91)
92	DHE	3.15-11	3.15.2	1	1		"(Access Road 1)" is in error, and should be corrected to "(Access Road 2)".	3(92)
93	DHE	3.15-11	3.15.2	1	2		Delete the second sentence, it is confusing. The primary construction access to the project is the Blaine road entrance. All other entrances would be internal.	3(93)
94	DHE	3.15-12	3.15.2	Table 3.15-6	last rows	last column	Please note. Because all the trip estimates in the application are based on 35, the actual traffic impacts are somewhat lower than the numbers in the application. These trip generation estimates for Project Operation Conditions are for 35 employees, which was BP's estimate at the time of the original traffic study two years ago. The DEIS now says 30 employees, but the trip generation has not been updated. The Total Trips for 30 employees would be 120 average weekday, 22 AM peak hour and 23 PM peak hour (Trips Entering and Exiting would change in proportion). However, since the numbers of trips generated during operation are so low, these differences in trips are not significant, and do not affect the impacts or mitigation.	3(94)
95	DHE	3.15-13	3.15.2	3	3		"(see Figure 3.1-6)" is erroneous, and should be corrected to "(see Figure 3.15-6)".	3(95)
96	KM	3.15-16	3.15.2	3	5		The sentence correctly states our earlier thoughts about barge transportation, in that it was anticipated that barge deliveries would not occur. Our current thinking is that barge deliveries are possible. Please leave this option open.	3(96)
97	DHE	3.15-17	Figure 3.15-7				At the end of the figure title, add "FOR PEAK CONSTRUCTION CONDITIONS"	3(97)
98	DHE	3.15-23	3.15.5			9	Delete "and Blaine Road/Grandview Road (SR 548)". See above comment for page 1-36, bullet number 3.	3(98)
99	MDT	3.16-1		2	5&6		Delete the last two sentences and add, "A Health and Safety Plan and Emergency and Security Plan would developed for the Cogeneration Project. These plans would coordinate with the Refinery's plans.	3(99)
100	MDT	3.16-17	3.16.2	3	2		Additional modeling would be performed for the Risk Management Plan and is not required at this time. This plan would require the facility to identify the 200 ppm endpoint. The 1000 ppm endpoint is not required.	3(100)

Expected Emissions after taking into account the effect of molecular weight

Expected Annual Emissions (tons/yr)	NOx	CO	VOC	PM_{10}	SO2	Totals
Primary Emissions						
Total from Cogeneration	181	81	28	94	50	434
Refinery Emission Reductions	(499)	(54)	(3)	(10)	(7)	(573)
Net Emissions	(318)	27	25	84	43	(139)
NOx (as NO2) to NH4NO3 Ratio	1.74					
SO2 to (NH4)2SO4 Ratio	2.06					
Secondary PM Formation Upon Aging	33%				20%	
Secondary PM Formed from NOx, SO2	104	-	-	-	21	
Secondary PM Avoided by Refinery Reductions	(286)				(3)	
Resulting Secondary Emissions						
Cogen Emissions After Secondary PM Formation	121	81	28	219	40	489
Emission Reductions After Secondary PM Formation	(334)	(54)	(3)	(299)	(6)	(696)
Net Emissions	(213)	27	25	(81)	34	(207)

NH4NO3 mol wt =	80	NH4NO3/NO2 =	1.74
(NH4)2SO4 mol wt =	132	(NH4)2SO4/SO2 =	2.06
NO2 mol wt =	46		
SO2 mol wt =	64		